GOVERNMENT OF INDIA
MINISTRY OF COMMERCE AND INDUSTRY

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REPORT
OF THE
INDIAN TARIFF BOARD
ON THE
CAUSTIC SODA AND BLEACHING POWDER INDUSTRY

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GOVERNMENT OF INDIA
MINISTRY OF COMMERCE & INDUSTRY

New Delhi, the 18th May, 1951.

RESOLUTION
(Tariffs)

No. 32(I)-T.B./51. - The Tariff Board was asked to investigate and report on the claim of the Caustic Soda and Bleaching Powder Industry for assistance or protection. The Board, having considered the matter, has submitted its Report. Its recommendations are as follows:-

(i) The following protective specific duties should be imposed and remain in force until the 31st March 1954:-

Name of article	Standard rate of duty	Preferential rate of duty if the article is the produce or manufacture of the U.K. or a British Colony
1. Caustic soda	Rs. 8-10-0 per cwt.	Rs. 6-4-0 per cwt.
2. Bleaching powder	Rs. 2-8-0 per cwt.	
3. Liquid chlorine	Rs. 20-2-0 per cwt.	Rs. 14-8-0 per cwt.

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(ii) The manufacturers should take early steps to balance their plants so as to enable a fuller utilisation of chlorine by manufacturing suitable chlorine products in the country.

(iii) There is some scope for improvement in the quality of the indigenous caustic soda and manufacturers should take necessary steps to bring the quality up to the standards of the imported article.

(iv) The manufacturers should make the necessary representations to the railway authorities concerned on the question of reduction of railway freights on salt, coke, coal, limestone, and the finished products.

(v) The matter of allocation of an adequate number of wagons and locomotives should be taken up with the authorities concerned.

(vi) The Ministry of Commerce and Industry should arrange to allocate more adequate supplies of M.S. Sheets to the industry.

(vii) As the grant of a rebate on the salt cess will assist this important industry in reducing its cost of production, Government should sympathetically consider this matter and take an early decision on it.

(viii) The proposal made by the D.C.M. Chemicals regarding the substitution of hydrochloric acid in the place of sulphuric acid for certain industrial uses should be examined by the D.G., Supplies and Disposals and if its practicability is established, the Railway Board should be approached to give favourable consideration to the request for a reduction of freight on hydrochloric acid.

2. As regards recommendation (i), this has been based on the landed cost of caustic soda prevailing at the time of the enquiry, namely, Rs. 26/13 per cwt., the fair selling price being estimated by the Board at Rs. 27/2/2 per cwt. The landed cost of imported caustic soda has since increased very considerably. Government do not, therefore, consider that there is at present any need to impose a protective duty as recommended. A watch will, however, be kept on the landed cost of imported caustic soda, and the matter reconsidered, if necessary.

3. Government accept recommendations (ii), (iii), (iv) and (v), and the attention of the industry is invited to these recommendations. Recommendations (vi), (vii) and (viii) are under examination.

4. As caustic soda is specified in the Schedule attached to the Supply and Prices of Goods, Act 1950, Government have taken the opportunity of considering whether any alteration is necessary in the internal controlled price of this commodity. The landed cost of caustic soda at the time of the Board's enquiry was Rs. 26-13-0 per cwt. This cost has since increased and the controlled price has accordingly been raised to Rs. 40-6 per cwt. F.O.R., Bombay under this Ministry's Notification No. PC-7(8)/50, dated the 19th April, 1951. The Board's estimate of the fair selling price of indigenous caustic soda is Rs. 27-2-0 per cwt. Government have considered whether the controlled price should not be fixed accordingly. In view, however, of the administrative difficulties involved in maintaining two prices for the same commodity and of the fact that the bulk of the requirements of the country has to be imported so that the consuming industries have to pay the higher world price, Government have decided to fix a uniform selling price based on the price of the imported commodity. Government expect indigenous manufacturers, who will benefit by this arrangement, to take advantage of this period to strengthen their financial position and reserves. This will be taken into account when considering any claim from the industry in future for the grant of assistance or protection.

S.A. VENKATARAMAN,

Secretary to the Government of India.

GOVERNMENT OF INDIA
MINISTRY OF COMMERCE & INDUSTRY

NOTIFICATION

New Delhi, the 18th May 1951.

No. 7(8)-PC/50. - In exercise of the powers conferred by Section 4 of the Supply and Prices of Goods Act, 1950 (No. LXX of 1950) and in modification of the late Ministry of Industry and Supply Notification No. S.R.O.503 dated the 2nd September, 1950, in so far as it relates to the fixation of the maximum price of indigenous Caustic Soda, the Central Government hereby fixes the following schedule of the maximum price of the said type of the Caustic Soda.

SCHEDULE

Variety of Caustic Soda.	Maximum price in certain specified localities.	Maximum price that may be charged by a distributor.	Maximum price that may be charged by a wholesale dealer.	Maximum price that may be charged by a retail dealer
1	2	3	4	5
Caustic Soda (solid) indigenous.	Port towns of:- *Bombay* Rs. 40/6/- f.o.r. per cwt. *Calcutta* Rs. 40/2/- f.o.r. per cwt. *Madras* Rs. 40/4/- f.o.r. per cwt.	The price specified in column 2 plus handling charges not exceeding As. -/8/- per cwt.	The price specified in column 3 plus a margin not exceeding As. -/8/- per cwt.	The price specified in column 4 plus a margin not exceeding Rs. 1/12/- per cwt.
	Other places in India:- Ex-factory Rs. 40/2/- per cwt. f.o.r. nearest railway station to factory.	The price specified in col.2 plus (a) actual railway freight by goods train from the railway station nearest to factory to the place of destination, and (b) handling charges not exceeding As. -/8/- per cwt.	The price specified in col. 3 plus a margin not exceeding As. -/8/- per cwt.	The price specified in column 4 plus a margin not exceeding Rs. 1/12/- per cwt.

S.K. DUTTA,

Deputy Secretary to the Government of India.

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REPORT ON THE CAUSTIC SODA AND BLEACHING POWDER INDUSTRY

Reference to the Board.

1. The Mettur Chemical and Industrial Corporation Ltd., Mettur, was the first producer to submit an application to the Government of India in June 1945 for protection or assistance to the caustic soda and bleaching powder industry. The principal request of the Corporation was that the then existing rates of import duties on caustic soda and bleaching powder should be raised and that out of the additional revenues obtained therefrom, Government should subsidise the industry. The Government of India, Department of Commerce, in their Resolution No. 218-T(55)/45 dated 3rd November 1945, referred the case to the Tariff Board for investigation. The Board, after a detailed inquiry, recommended, *inter-alia*, that Mettur Chemical and Industrial Corporation, the only applicant for protection, should be given a subsidy at the rate of Rs. 2 per cwt. of caustic soda and Rs. 1-13-0 per cwt. of bleaching powder for a period of fifteen months from 1st October 1946 on the basis of actual sales but subject to the condition that these articles were sold at prices not higher than those of the imported commodities. Government, in their Resolution No. 218-T(19)/47 dated 22nd March 1947, accepted this recommendation but laid down a further condition that the amount of subsidy should be reduced if, upon examination of the Company's accounts, it was found that the company had made profits on the sale of liquid chlorine in excess of the profits allowed for this

item by the Board in preparing its estimate of fair selling prices. On an examination of the Company's accounts in May 1948, the Board found that the Company had made profits on the sale of liquid chlorine in excess of the profits allowed for this item by the Board. It was also found that the Company had been selling caustic soda and bleaching powder at prices higher than those of the imported articles, thus violating the other condition laid down by the Board. The Board, therefore, in its letter No. TB/E/4, dated 15th June 1948, recommended that the subsidy should not be paid. Government accepted this recommendation and no subsidy was paid to the Company. Later, the Mettur Chemical and Industrial Corporation, Ltd., in its letter No. 33741 dated 28th March 1949, requested Government to institute a fresh tariff inquiry in view of the changed circumstances in the latter half of 1948. The Company requested that protection should be given to the industry through a total ban on the imports of caustic soda for a period and a pooling of the available stocks of imports and indigenous production "through recognised trade channels with a view to their rational distribution at economic levels". The Indian Chemical Manufacturers' Association, Calcutta, in their letter No. 1246 dated 13th April, 1949, requested Government to take immediate measures to restrict imports of caustic soda to facilitate the disposal of large accumulated stocks with the importers as well as the indigenous manufacturers. They further requested that the case of the caustic soda industry should be referred once again to the Tariff Board for an inquiry into the present position of the industry and that Government should take such protective measures as would be necessary to stabilise the industry under the present circumstances. Accordingly, the Government of India, Ministry of Commerce, in their Resolution No. 32(1)-T.B./49 dated 29th June 1949 (*Vide* Appendix I), referred to the Board for investigation and report the applications for assistance or protection received from the caustic soda and bleaching powder industry.

Terms of reference.

2. This inquiry is under the terms of reference stated in the Government of India Resolution, dated the 3rd November 1945, which are as follows:-

(i) that the industry is established and conducted on sound business lines;

(ii) (a) that, having regard to the natural or economic advantages enjoyed by the industry and its actual or probable costs, it is likely within a reasonable time to develop sufficiently to be able to carry on successfully without protection or State assistance; or

(b) that it is an industry to which it is desirable in the national interest to grant protection or assistance and that the probable cost of such protection or assistance to the community is not excessive.

Where a claim for protection or assistance is found to be established, that is, if condition (i) and condition (ii) (a) or (b) are satisfied, the Board may recommend -

(i) whether, at what rate and in respect of what articles, or class or description of articles, a protective duty should be imposed;

(ii) what additional or alternative measures should be taken to protect or assist the industry; and

(iii) for what period, not exceeding three years, the tariff or other measures recommended should remain in force.

In making its recommendations the Board has to give due weight to the interests of the consumer in the light of the prevailing conditions and also consider how the recommendations affect industries using the articles in respect of which protection is to be granted.

Previous Tariff Board's recommendations and Government's orders thereon.

3. The previous Tariff Board submitted its report on 20th July 1946, containing the following recommendations:-

(i) "As the production of caustic soda and bleaching powder in the country is much below its requirements, it is desirable to increase the production of these chemicals by setting up additional plants. The Board was advised that an electrolytic plant with a rated capacity of 15 to 20 tons of caustic soda per day would constitute an economic unit.

(ii) Any war-time system of control or monopoly should now be brought to an end and caustic soda should be included in the Open General Licence. Licences for importing this article at competitive prices from non-sterling countries should be given freely.

(iii) The scheme of protection recommended by us for the Metur Chemical and Industrial Corporation for a period of two and a half years from 1st October 1946 to 31st March 1949 may be divided into two equal halves, namely, from 1st October 1946 to 31st December 1947 and from 1st January 1948 to 31st March 1949. The Company will need assistance only during the first half of the protection period and should be able to stand on its own legs during the second half. A review should be undertaken at the end of 1947 to find out if the Company's plans in regard to the installation of additional plant have been carried out.

(iv) Protection should be given to the Company through a subsidy, on the basis of its actual sales, equal to the difference between its fair selling prices and the landed costs including duty. During the period that the Company receives a subsidy from Government it must give an undertaking to sell these products at prices not higher than those of imported articles.

(v) (a) *Caustic soda:* A subsidy of Rs. 2 per cwt. should be paid to the Company on the basis of actual sales of caustic soda from 1st October 1946 to 31st December 1947. If during this period the landed cost (including duty) falls below or rises above Rs. 15-10-0 per cwt., the subsidy should be increased or reduced correspondingly. For the second half of the protection period, if the landed cost of caustic soda remains at present level, no subsidy should be paid to the Company. If the landed cost falls below Rs. 15-9-0, a subsidy should be paid on the actual sales at a rate equal to the difference between Rs. 15-9-0 being the Company's fair selling price of the product and the average landed cost (including duty) for the period.

(b) *Bleaching powder:* During the first half of the protection period, the Company should be paid a subsidy at the rate of Rs. 1-13-0 per cwt. on its actual sales of bleaching powder from 1st October 1946 upto the 31st December 1947. If during this period the landed cost (including duty) of bleaching powder falls below or rises above Rs. 11-5-0 per cwt., the subsidy should be increased or reduced correspondingly. If, during the second half of the protection period, the present landed cost of Rs. 11-5-0 per cwt. remains steady, no subsidy should be paid to the Company. If, however, during this period, the landed cost falls below Rs. 11-5-0 per cwt. the Company should be paid a subsidy on actual sales, equal to the difference between Rs. 11-5-0 being the Company's fair selling price of the product and the average landed cost (including duty) for the year.

(c) *Liquid chlorine*: Since the Company's fair selling price of this product is well below the present-day selling price, no subsidy or protection is required. The Company should sell it at competitive rates so as to stimulate the consumption of this important chemical in India and to encourage its consumers to use this product in large quantities.

(vi) There is no case for recommending the conversion of the existing revenue duty on caustic soda into a protective duty. If, in the interests of the general industrial advancement of the country, Government should decide during the protection period to lower the cost of caustic soda to consumers by reducing or abolishing the existing duty, the subsidy should be increased correspondingly so as to equalise the fair selling price with the new landed cost consequent on the reduction or abolition of the duty.

(vii) Government should appoint an Inspector to visit the Company's works periodically and ensure that all possible measures of economy are being undertaken and that the Company's plans for making its plant up-to-date by adding new machinery are being implemented.

(viii) Government should give facilities to the manufacturers of caustic soda, bleaching powder and liquid chlorine, for importing up-to-date plant from abroad or for making replacement of their machinery by new parts. For this purpose manufacturers should be given import licences and necessary foreign exchange. The import duty on machinery hereafter imported for the production of caustic soda, bleaching powder and liquid chlorine should be refunded.

(ix) Government should consider the desirability of either themselves setting up or giving encouragement to the installation of two or three large factories for the manufacture of caustic soda so as to satisfy the requirements of the country which amount to nearly 70,000 tons per annum.

(x) In setting up these factories, due consideration should be given to the disposal of chlorine which has so far proved a handicap in the development of the alkali industry in India. From this point of view, some of these plants should be based on the production of caustic soda by the causticising of lime process in which the problem of disposal of chlorine does not arise.

(xi) Where cheap electric power is available and other factors are favourable to the setting up of electrolytic plants, plans should be devised for the proper disposal of chlorine by the manufacture of its compounds, so that the chlorine generated in the process may be fully utilised.

(xii) Plans should be made for the full utilization of the hydrogen generated in the electrolytic process.

(xiii) Where plants for the manufacture of caustic soda either by the electrolytic or by the causticising process are established, Government should grant concession rates for the transport of materials and especially low rates for electric power, so that caustic soda and bleaching powder may be manufactured and supplied to consuming industries at reasonable rates.

(xiv) These new plants should be of fairly large size, preferably having a capacity of 15 to 20 tons of caustic soda per day, so that the incidence of overheads on the cost of manufacture may be small.

(xv) Arrangements should be made for getting experts, especially conversant with the alkali industry to work these plants for the first few years till the alkali industry in India is placed on a sound and firm footing and is able to stand on its own legs."

The Government of India, in their Resolution No. 218-T(19)/47 dated 22nd March 1947, accepted recommendation (ii) and stated that necessary steps will be taken to implement it. As regards recommendations (iii), (iv) and (v), while Government accepted the figures relating to the landed costs of the chemicals referred to therein they were not satisfied that in assessing the costs of production the Board had given sufficient credit for the sale of chlorine. They decided, therefore, to grant a subsidy to the Mettur Chemical and Industrial Corporation based on actual sales of caustic soda and bleaching powder but subject to certain specified conditions. As already stated in paragraph 1, as the Company did not fulfil those conditions, no subsidy was given to it. Government stated that recommendation (vi) would be considered by them if and when necessity arose, while they proposed to take suitable action to implement recommendation (vii). Recommendation (viii) was partly accepted by Government and they stated that the question of remission of duty on imported machinery was under consideration. Government also stated that they were actively considering recommendation (xiii). As for recommendations (i), (ix), (x), (xi), (xii), (xiv) and (xv), Government drew the attention of the industry to these and hoped that they would be implemented as far as possible.

Scope of the inquiry.

4. At the previous inquiry, though the terms of reference specified only caustic soda and bleaching powder, the scope of the inquiry was extended so as to cover liquid chlorine as well, which was produced from the chlorine gas obtained as a co-product in the manufacture of caustic soda by the electrolytic process. The present

inquiry also covers caustic soda, bleaching powder and liquid chlorine. In addition to these, due consideration has been given to ancillary products like bleach liquor, hydrochloric acid and zinc chloride in the production of which large quantities of chlorine are used.

Method of inquiry.

5. (a) The Board issued a press communique on 16th July 1949, inviting, in the first instance, producers who were interested in the inquiry to contact the Board and obtain copies of the preliminary questionnaire. It was also pointed out in the communique that detailed questionnaires for producers, importers and consumers were under preparation and that, as soon as they were ready, the public would be duly notified. Accordingly, on 12th December 1949, the Board issued a press note stating that detailed questionnaires for producers, importers and consumers were ready for issue and that firms, associations and persons interested in the inquiry could get copies of of the same from the Board's office. A list of producers, importers, consumers and associations to whom detailed questionnaires were issued and those who have replied to the questionnaires or sent memoranda, is given in Appendix II.

(b) Besides collecting the necessary information regarding caustic soda and bleaching powder, steps were also taken to collect information on the production, imports and consumption of allied products like liquid chlorine, bleach liquor, hydrochloric acid and zinc chloride.

(c) Separate letters asking for necessary information were also issued to the Collectors of Customs; Director-General of Commercial Intelligence and Statistics; Chief Controller of Imports; Chief Controller of Exports; Director General of Industries and Supplies; Director General of Health Services; Secretary, Geological Survey of India; Textile Commissioner, Bombay; Chairman, Central Electricity Commission and Controller of Salt to the Government of India. In addition, letters were issued to the Directors of Industries of the different States, Chambers of Commerce, etc.

(d) Dr. B.V. Narayanaswamy Naidu, Member, visited the Calico Mills, Chemical Division, Ahmedabad, on 9th July 1950. Mr. S. S. Mehta, Board's Technical Adviser, visited the following factories on the dates mentioned against each:-

	Factory visited	Date of visit
1.	The Mettur Chemical & Industrial Corporation Ltd., Mettur Dam.	1st February 1950
2.	Tata Chemicals Ltd., Mithapur.	10th March 1950
3.	The Calico Mills, Chemical Division, Ahmedabad.	9th July 1950
4.	The D.C.M. Chemical Works, Delhi.	18th July 1950

(e) The cost investigation of the following four factories was undertaken by Mr. S.V. Rajan, Assistant Cost Accounts Officer attached to the Board, on dates mentioned against each:-

	Factory costed	Date
1.	The Mettur Chemicals	21st January 1950
2.	Tata Chemicals	9th March 1950
3.	Calico Mills, Chemical Division.	12th July 1950
4.	D.C.M. Chemical Works	20th July 1950

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(f) A public inquiry was held on 28th and 29th November 1950 at Bombay in the Board's office. A list of persons who attended the inquiry and gave oral evidence is given in Appendix III. From 29th November to 1st December 1950, the Board discussed in camera with the manufacturers, details relating to their costs of production of the different products.

6. (a) *Caustic soda:* Different raw materials are required for each of the two processes by which caustic soda is manufactured.

Raw materials.

(i) *Causticisation process:* The principal raw materials used in this process are soda ash and lime, the latter being produced by burning limestones mixed with coke in a lime kiln. The Tata Chemicals who are the only producers of caustic soda by this process are utilising soda ash produced in their own factory. The cost of soda ash forms a major proportion of the cost of production of caustic soda by this process and the growth of the causticisation process is,-therefore, closely linked with that of the soda ash industry. They obtain their requirements of limestone mostly from Ranavav quarries near Porbandar and to a lesser extent from local quarries. The supply of coke is obtained from Bengal and Bihar.

(ii) *Electrolytic process:* The principal raw material required in this process is common salt. The Tata Chemicals manufacture salt at their own salt works situated at the site of the factory, the Mettur Chemicals produce the salt at their own works situated at a distance of about 270 miles, whereas the other manufacturers purchase the salt from various Government Salt Works. From the information supplied by the manufacturers we understand that they have to pay on an average freight charges to the extent of about 30 per cent of the total cost of salt delivered at the factory. The salt generally contains impurities of calcium, magnesium and sulphates. Supplementary raw materials in small quantities are required for the removal of these impurities from the salt brine before it is electrolysed. Calcium and magnesium are removed by the addition of lime and soda ash or by caustic lye (dilute caustic soda solution) and soda ash. Small quantities of hydrochloric acid are required to neutralise the excess of alkali used during removal of calcium and magnesium. Hydrochloric acid is obtained from the acid plant which forms a part of the factory. Coal and/or fuel oil are required for the production of electric power as well as for evaporation and final fusion of caustic soda from the solution obtained by electrolysis to the final product.

A large quantity of electricity is required in the electrolytic process and it is, therefore, essential that it should be available at low cost. While the Mettur Chemicals purchase hydro electric power, the other manufacturers generate their own electricity.

(b) *Bleaching powder and bleach liquor:* The raw materials required are chlorine gas which is produced as a joint product during the manufacture of caustic soda and slaked lime which is obtained from limestone. While limestone is available in plenty in India, the manufacturers have found that the quality of limestone is not of the requisite standard due to the presence of impurities such as traces of iron and manganese and low content of CaO (calcium oxide) which has been one of the principal reasons for the bleaching powder being unstable.

Process of manufacture.

7 (a) *Caustic soda:* As stated in paragraph 6, caustic soda is manufactured by either of the two methods, *viz.*, (i) causticisation process, (ii) electrolytic process.

(i) *Causticisation process:* A solution of soda ash is made to react with slaked lime produced by burning limestone. The resultant mixture consists of caustic soda solution, solid calcium carbonate in suspension, excess lime and other impurities. The solution containing about 8 to 10 per cent of caustic soda is separated from the solid impurities by settling and filtration. It is concentrated in multiple effect evaporators until a 50 per cent solution is obtained which is directly marketed as liquid caustic soda or, alternatively, heated by direct firing to obtain fused anhydrous caustic soda which is packed in mild steel drums.

(ii) *Electrolytic process*: Common salt is dissolved in water to form saturated brine which is purified by the addition of lime and soda ash to remove the impurities of calcium and magnesium Caustic lye may also be used instead of lime for the purification process. The impurities of calcium, magnesium and other insoluble products are removed by settling, and the purified brine is heated, acidified with hydrochloric acid and fed to the cells where electrolysis takes place. The products of electrolysis are a solution of caustic soda and chlorine and hydrogen in the gaseous form. The cells used by all the manufacturers are of the diaphragm type which produce a dilute solution of caustic soda containing about 8 to 12 per cent of caustic soda and 14 to 15 per cent of common salt, the concentration varying according to the design of cells used. Caustic soda in the form of 50 per cent solution or in the solid form is obtained by the same method as described under sub para. (i). In the case of electrolytic process, however, the salt contained in the dilute solution separates out during the course of evaporation and is returned to the brine refinery for re-use. By the use of mercury cells, caustic soda of a purer grade is obtained, containing very small quantities of chemical impurities. This grade of caustic soda is required by the rayon industry. Chlorine gas, obtained as a joint product, is dried by passage through stoneware towers against a spray of sulphuric acid, compressed, and used for the production of liquid chlorine, bleaching powder, bleach liquor, hydrochloric acid and other products. The hydrogen gas is compressed and used in the manufacture of hydrochloric acid and vanaspati or burnt directly as a fuel or packed in cylinders for marketing.

The manufacturers have not been finding it possible to utilise completely the joint products obtained in the electrolytic process so that a portion of the hydrogen is vented to the atmosphere whereas a portion of the chlorine is disposed of by letting it out to the atmosphere or absorbed in milk of lime or sea water.

(b) *Bleaching powder:* The production of bleaching powder is carried out in towers containing a set of chambers in which hydrated lime is allowed to pass down from chamber to chamber while dry chlorine gas is blown from the bottom upwards. As a result of mixing and chemical reaction at controlled temperature, bleaching powder is produced which is packed immediately in galvanized iron drums. The bleaching powder contains about 25 to 30 per cent available chlorine. Hydrated lime is obtained by burning limestone in admixture with coke and then treating the lime obtained with the requisite quantity of water.

(c) *Liquid chlorine:* Chlorine which is generated as a result of electrolysis is dried, compressed, and cooled by refrigeration, so that it is converted into a liquid. The liquid chlorine is packed in cylinders or tanks before being placed on the market.

(d) *Bleach liquor:* The tail gas from chlorine liquefaction plant or dry chlorine gas is absorbed in milk of lime at the required temperature to produce a solution of calcium hypochlorite or bleach liquor. The solution contains about 60 to 90 gms. of available chlorine per litre.

8. **Uses.** (a) *Caustic soda:* This is an important heavy chemical used in the manufacture of various products. In India it is used mainly in the manufacture of soap, textiles, paper and in certain miscellaneous industries like oil refining, vanaspati, chemicals and explosives. It is also used in the rayon industry which requires a special grade containing very small quantities of chemical impurities.

(b) *Chlorine products:* Chlorine, in various forms, finds its principal use in bleaching paper pulp, cotton yarn and

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textiles. For this purpose, it is converted into liquid chlorine, bleaching powder or bleach liquor. Liquid chlorine and bleaching powder are also used as disinfectants, for sanitation purposes and in the manufacture of organic and inorganic chlorine compounds. Liquid chlorine finds a further use for purification of water. The choice between various chlorine products depends upon transport facilities, the price at which the chlorine is made available in any of the different forms and the ease of operation. We find that there is a growing tendency towards the use of liquid chlorine by the larger consumers in the paper and textile industries for bleaching and by the larger municipalities for water purification. On the other hand, there is still a demand for bleaching powder by the smaller consumers.

Domestic demand.

9. (a) *Caustic soda*: Various estimates of the demand for caustic soda were placed before the Board by the D.G.I.& S., the manufacturers, consumers and importers. The D.G.I. & S. estimated the demand at 63,500 tons, excluding the caustic soda manufactured by certain paper mills for their own consumption. The manufacturers furnished different estimates varying from 45,000 tons to 50,000 tons while the Imperial Chemical Industries (India) Ltd., estimated the demand at 55,000 tons. These estimates were discussed at the public inquiry and were further examined in the light of the figures given by various cosuming industries. And we estimate the present annual demand at 60,000 tons with the following breakdown into the requirements of different consuming industries:-

Soap ...	...	25,000 tons
Textiles ...	...	15,000 "
Paper ...	...	10,000 "
Vanaspati ...	...	1,500 "
Rayon ...	...	5,000 "
Miscellaneous	...	3,500 "
	Total	60,000 tons

The future demand for caustic soda by 1953 has been estimated at 1,33,000 tons per annum by the Panel on the Heavy Chemicals and Electro Chemical Industries set up by the late Department of Planning and Development. We feel that this figure is not likely to be attained in the next three years. We were informed by the representatives of the soap industry that during 1948, which was the year of peak production of soaps, 27,000 tons of caustic soda had been consumed in the manufacture of soap. In the subsequent years, this consumption has been reduced owing to the difficulties in obtaining raw materials at reasonable prices. Government, however, are making all possible efforts to overcome the difficulties confronted by the soap industry, and there is a likelihood of a considerable increase in the offtake of caustic soda by this industry in the coming years. The representative of the Textile Commissioner's Office informed us that the requirements of the textile industry would increase by about 25 per cent. The requirements of the paper industry are expected to increase by about 20 per cent. in the next three years. In the vanaspati and rayon industries, we do not envisage any appreciable increase over the demand indicated in the above table. Taking these factors into consideration, we expect that the annual demand is likely to go up to 72,000 tons by 1953. It may be noted that these estimates of present and future demand are exclusive of the production of caustic soda by certain paper mills for their own consumption.

(b) *Chlorine products:* The principal demand for chlorine is in the bleaching of paper pulp and in the textile industry where chlorine may be used in the form of bleaching powder, liquid chlorine or bleach liquor. Since these products are interchangeable and the requirements of each product can be expressed in terms of the equivalent chlorine, we have considered the demand for chlorine as such irrespective of the form in which it is utilised. For the sake of uniformity, we have also considered the demand for hydrochloric acid and zinc chloride as expressed in terms of equivalent chlorine. Various estimates submitted by the D.G.I. & S., manufacturers and importers were discussed in detail at the public inquiry and we have estimated the present annual demand for chlorine at 12,000 tons of which 3,000 tons are manufactured by the paper mills for their own consumption. The breakdown for the remaining 9,000 tons of chlorine will be as follows:-

Chlorine content of bleaching powder, liquid chlorine and bleach liquor required for bleaching of paper pulp and textiles, sanitation and water purification ...	7,000 tons
Chlorine required for hydrochloric acid and zinc chloride	2,000 "
Total	9,000 tons

It is expected that, by the end of 1953, the demand for chlorine will go up to 15,000 tons per annum on the basis of a 25 per cent increase over the present demand.

Indigenous production.

10. (a) *Caustic soda:* Subsequent to the previous Board's inquiry, there has been considerable expansion in the industry. At present, there are six factories manufacturing caustic soda of which five units produce it by the electrolytic process while the remaining one produces it by both the methods. The following table gives the date of commencement of production, annual rated capacity and figures of actual production during 1947, 1948, 1949 and January/October 1950.

[Table on next page]

Name of the producer	Date of commencement of production	Annual rated capacity (tons)	Actual production (tons)			
			1947	1948	1949	Jan.-Oct. 1950
1) Tata Chemicals:						
(a) Causticisation method	1945	6,000	350	890	540	1,532
(b) Electrolytic method	May 1943	2,400	292	380	233	705
2) Mettur Chemicals	April 1941	1,500*	1,095	1,200	1,234	954
3) Calico Mills, Chemical Division	Dec. 1947	2,275	nil	1,040	1,686	1,633
4) D.C.M. Chemicals	March 1949	2,100	nil	nil	826	1,640
5) Rohtas Industries	April 1939	2,450	757	709	880	796
6) Alkali and Chemical Corporation	April 1940	2,000	1,698	1,643	1,916	1,680
Total		18,725	4,192	5,862	7,315	8,940

*When their new plant with a capacity of 6.7 tons of caustic soda per day goes into production in the first quarter of 1951, the capacity will increase to 3,700 tons.

Besides the above manufacturers, a number of paper mills produce caustic soda and chlorine to meet their own requirements. The aggregate capacity of such plants is of the order of 4000 to 5000 tons of caustic soda per annum.

(b) *Bleaching powder:* Although there has been an increase in the capacity for the production of caustic soda subsequent to the previous inquiry, there has been no expansion in the capacity for producing bleaching powder.

The new units which have come into existence have been converting chlorine into liquid chlorine or bleach liquor instead of manufacturing bleaching powder. The following statement gives the annual rated capacity and actual production of bleaching powder during 1947, 1948, 1949 and January/October 1950:-

Name of the producer	Annual rated capacity (tons)	Actual production (tons)			
		1947	1948	1949	Jan.- Oct. 1950
(1) Tata Chemicals	4,000	779	1,129	368	730
(2) Mettur Chemicals	2,000	1,812	1,792	1,815	1,468
(3) Rohtas Industries Ltd.	1,800	398	522	345	738
Total	7,800	2,989	3,443	2,528	2,936

(c) *Liquid chlorine:* The following table gives the annual rated capacity and actual production of liquid chlorine in 1947, 1948, 1949 and January/October 1950.

Name of the producer	Annual rated capacity (tons)	Actual production (tons)			
		1947	1948	1949	Jan.- Oct. 1950
(1) Tata Chemicals	1,560	66	121	107	97
(2) Mettur Chemicals	330*	118	145	219	271
(3) Calico Mills, Chemical Division	1,890	nil	23	207	349
(4) Rohtas Industries	1,800	nil	nil	nil	27
(5) D.C.M. Chemicals	1,860	nil	nil	334	736
(6) The Alkali & Chemical Corporation	1,700	1,540	1,460	1,680	1,490
Total	9,140	1,724	1,749	2,547	2,970

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* They have installed a new plant for the liquefaction of chlorine with a capacity to produce 11 tons of liquid chlorine per day.

(d) *Bleach liquor*: The following table gives the annual rated capacity and actual production of bleach liquor (expressed in terms of equivalent chlorine in tons) in 1947, 1948, 1949 and January/October 1950.

Name of the producer	Annual rated capacity (tons)	Actual production (tons) 1947	1948	1949	Jan.- Oct. 1950
Calico Mills, Chemical Division	1,800	nil	747	944	724
Mettur Chemicals	88	40	54	53	51
Total	1,888	40	801	997	775

(e) *Future production:* In addition to the production from the existing units, the following schemes of expansion are expected to materialise and contribute to an increase in production in the near future:-

(i) The Mettur Chemicals have put up an additional electrolytic plant with a capacity of about 6.7 tons of caustic soda per day, and a new plant for evaporation of caustic soda and for liquid chlorine. The plant is expected to come into production in the first quarter of 1951.

(ii) It is understood that the Alkali and Chemical Corporation is planning to increase the capacity of its plant.

(iii) The Travancore & Mettur Chemicals, Alwaye, are installing a plant for the production of 20 tons of caustic soda per day. The caustic soda will be produced by mercury cells and will be of a grade suitable for the rayon industry. The plant is expected to go into production in 1952.

(iv) The Hindusthan Heavy Chemicals, Calcutta, have informed the Board that they are putting up a plant for the production of 6.2 tons of caustic soda per day. The plant is reported to be coming into operation in the first quarter of 1951.

In the planning of production in the existing factories and under the new schemes for the production of caustic soda, an important factor has to be taken into consideration. The present demand for caustic soda is considerably larger than the present installed capacity for its production whereas the existing demand for chlorine and chlorine products is not sufficient to absorb all the chlorine that is automatically produced as a co-product of caustic soda under the electrolytic process. As a result, the manufacturers have been allowing part of the chlorine to go to waste. Chlorine has numerous potential uses, such as in the production of organic solvents, metallic chlorides, insecticides, chlorinated rubber, fertilisers, plastics, dyestuffs, etc. In the schemes of extension of the existing factories and installation of new plants, therefore, due regard should be paid to the disposal of chlorine. The responsibility for the utilisation of chlorine and thereby for reducing the cost of caustic soda and chlorine products to the community rests on the manufacturers themselves and the inability on their part to fulfil this responsibility should not be an excuse for high costs of production of such basic chemicals like caustic soda and chlorine. Although in the present initial period, we have made an allowance for the chlorine which is allowed to go to waste, the position cannot be allowed to continue for long. We, therefore, recommend that the manufacturers should take early steps for balancing their plants so as to be able to make a fuller utilisation of chlorine by manufacturing suitable chlorine products in the country.

Quality of the indigenous product.

11. (a) *Caustic soda:* The consumers represented to us that the indigenous caustic soda was of lower strength and that, in consequence, proportionately more of the indigenous article was required to be used in the consuming industries, as compared

with the imported commodity. This point was discussed at the public inquiry and we were informed that the indigenous product was about 93% to 96% pure as against the imported product which was stated to be about 98% pure. The consensus of opinion, however, was that the quality of the indigenous caustic soda was satisfactory for purposes of all consuming industries except the rayon industry which required a special grade. We believe there is some scope for improvement in the quality of the indigenous product and we recommend that the manufacturers should take necessary steps to bring up the quality to the standards of the imported product.

(b) *Bleaching powder, liquid chlorine and bleach liquor*: The consumers stated in their representations that the quality of the indigenous bleaching powder was inferior to that of the imported article, that the indigenous product was unstable and that there was a substantial loss of chlorine during storage. We understand that the bleaching powder produced in the country contains about 25 to 30 per cent available chlorine at the time of its manufacture while the imported material contains 35 per cent chlorine at the time of manufacture and about 30 per cent chlorine after normal storage. The manufacturers agreed that the quality of the indigenous product was inferior but explained that this was mainly due to climatic conditions and to the low quality of lime. They, however, contended that the indigenous bleaching powder was suitable for the requirements of the consuming industries because bleaching powder was required to be used mostly in the form of solutions of low concentration. The manufacturers have also assured us that they would make all possible efforts to standardise the quality of lime and improve the process of manufacture so as to produce more concentrated and stable bleaching powder.

(c) The quality of liquid chlorine and bleach liquor is found to be quite satisfactory for all purposes.

12. I. IMPORTS:

Imports and Import Control policy.

(a) *Caustic soda:* The following table shows the quantity and value of imports of caustic soda into India from 1936-37 to 1949-50, as given in the Sea-borne Trade account of India.

Year	Quantity (tons)	Value Rs. ('000)
1936-37	21,201	3,657
1937-38	25,924	4,281
1938-39	25,057	4,545
1939-40	35,681	7,231
1940-41	34,941	7,562
1941-42	26,589	6,757
1942-43	27,559	8,337
1943-44	35,355	11,091
1944-45	42,331	13,058
1945-46	37,909	11,674
1946-47	29,891	8,938
1947-48	21,231	11,184
1948-49	90,616	76,172
1949-50	12,989	5,944

Till 1947-48 the bulk of imports of caustic soda was from the U.K. Later on, however, the larger proportion of the imports has been arriving from other countries with the result that in the year 1948-49 the greater part of the imports was from countries other than the U.K., the chief among them being the U.S.A. and Italy. The manufacturers have stated that in future if imports were freely allowed into the country, the competition, besides being from the U.K., would be from the U.S.A., France, Italy and Japan.

(b) *Bleaching powder:* The quantity and value of imports of bleaching powder from 1936-37 to 1949-50, as shown in the Sea-borne Trade Account of India, are as follows:-

Year	Quantity (tons)	Value Rs. ('000)
1936-37	8,176	914
1937-38	11,865	1,313
1938-39	10,657	1,249
1939-40	11,788	1,782
1940-41	8,579	1,529
1941-42	5,026	896
1942-43	1,312	242
1943-44	4,565	820
1944-45	4,065	764
1945-46	7,985	1,572
1946-47	7,316	1,675
1947-48	8,367	2,287
1948-49	11,521	3,903
1949-50	5,513	1,950

Practically, all the imports of bleaching powder have been all along from the United Kingdom, principally through the Imperial Chemical Industries.

(c) *Liquid chlorine:* The quantity and value of imports of liquid chlorine as stated in the Sea-borne Trade Account of India for the years 1936-37 to 1949-50 are given below:

Year	Quantity (tons)	Value Rs. ('000)
1936-37	...	...
1937-38	298.40	2,49,220
1938-39	304.56	2,12,752
1939-40	232.08	1,59,203
1940-41	22.15	25,391
1941-42	...	...
1942-43	0.488	571
1943-44	0.028	31
1944-45	...	...
1945-46	...	...
1946-47	...	...
1947-48	...	...
1948-49	...	...
1949-50	0.292	24,426

II. IMPORT CONTROL POLICY

(a) *Caustic soda:* During 1947, import of caustic soda was restricted, being subject to a monetary ceiling. During 1948 and the first half of 1949, import was allowed from all sources on a very liberal basis and there were heavy imports resulting in a large accumulation of stocks. During the second half of 1949, licences for imports of caustic soda were issued subject to essentiality and monetary ceiling. During 1950 and the first half of 1951 imports of caustic soda have been allowed from soft currency countries only on a regulated basis.

Relevant extracts indicating the import control policy for the different shipping periods from July-December 1948 to January-June 1951, are reproduced in Appendix IV.

(b) *Bleaching powder:* From July 1948 to June 1949, imports were allowed on a liberal basis from sterling and soft currency areas only while during the second half of 1949 and in 1950 licences were granted only from soft currency areas subject to quota and monetary ceiling. Extracts from relevant public notices governing import trade control during the different shipping periods from July-December 1948 to the current shipping period, *viz.*, July-December 1950, are reproduced in Appendix IV.

(c) *Liquid chlorine:* The import control policy followed by Government with regard to liquid chlorine during the different shipping periods, as furnished by the Chief Controller of Imports, is given in a statement in Appendix IV. It will be seen from the statement that, since July 1949, imports have been allowed only from soft currency areas and subject to a monetary ceiling.

Existing rates of duties.

13. Caustic soda and liquid chlorine are at present assessed under item 28 and bleaching powder under item 28 (1) of the First Schedule to the Indian Customs Tariff (Thirty-second Issue). The relevant extracts from this Schedule are given on next page.

Item No.	Name of article	Nature of duty	Standard rate of duty	Preferential rate of duty if the article is the produce or manufacture of			Duration of protective rates of duty
				The United Kingdom	A British Colony	Burma	
28	Chemicals, Drugs and Medicines, all sorts not otherwise specified	Preferential Revenue	Rate of duty actually charged at the time for such products of the United Kingdom or British Colonial origin plus 10 per cent *ad valorem*.	26 per cent *ad valorem*	26 per cent *ad valorem*.	10 per cent *ad valorem*.	
	Tariff Values:						
	Rs. a. p. per cwt.						
	Soda, caustic, flake petal or powder 27 0 0						
	Soda, caustic, solid 24 0 0						
	per lb.						
	Chlorine 0 8 0						
	N.B. The tariff values apply to articles packed in containers of not less than 14 lbs.						
28(1)	Bleaching paste and bleaching powder.	...	Free	...	...	...	....

* These are GATT items. (Only preferential margins are bound)

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C.i.f. prices.

14. A statement showing the recent c.i.f. prices and landed costs of caustic soda and bleaching powder, as furnished by the principal importers and Collectors of Customs, Bombay, Calcutta, Madras and Saurashtra, is given in Appendix V. From the statement, it will be seen that the c.i.f. prices of solid caustic soda imported from the U.K. have varied in recent months from Rs. 18-2-10 to Rs. 25-6-1 per cwt. It was generally agreed at the public inquiry that, for the purposes of comparison with the fair selling price of the indigenous caustic soda (solid), the current c.i.f. price of caustic soda imported from the U.K. should be taken at Rs. 20 per cwt. As regards bleaching powder, the recent c.i.f. prices of imports from the U.K. have varied from Rs. 16-1-9 to Rs. 22-3-2 per cwt. The principal importers suggested that the current c.i.f. price of this article should be taken at Rs. 18-12-5 per cwt. As there have been no imports of liquid chlorine in recent months, the current c.i.f. prices of this article could not be ascertained. In 1949, however, it was Rs. 31-0-1 per cwt.

Board's estimate of costs of production and fair selling prices.

15. Four firms were selected by the Board for investigating the cost of production of caustic soda, bleaching powder and liquid chlorine. The Assistant Cost Accounts Officer attached to the Board examined the cost of production of the various products manufactured by the firms. The names of the firms and the periods selected for costing are given below:-

(1) M/s. Mettur Chemical & Industrial Corporation Ltd., Mettur Dam.	Year ended 31-3-1949 and half year ended 30-9-1949.
(2) Tata Chemicals Ltd., Mithapur.	Eight months ended 28-2-1949 and two months ended 31-3-1950.
(3) Ahmedabad Manufacturing and Calico Printing Co. Ltd., (Calico Mills - Chemical Division), and	Year ended 31-12-1949.
(4) D.C.M. Chemical Works Ltd., Delhi.	Half year ended 30-6-1950.

The first firm was the one selected by the Board during its previous inquiry.

Caustic soda by causticisation process: The cost of production of caustic soda by the causticisation process as investigated by the Assistant Cost Accounts Officer at the Tata Chemicals shows exorbitantly high cost on account of the high price that has to be paid for the soda ash produced by the firm. About 1.8 tons of soda ash are being used per ton of caustic soda in addition to limestones. Based on the present cost at which soda ash is manufactured by the Company, the overall cost of caustic soda by the causticisation process works out to be excessively high when compared with that of caustic soda by the electrolytic process. Moreover, the production of indigenous soda ash is itself not adequate to meet the demand in the country. We, therefore, feel that, under the existing circumstances the manufacture of caustic soda by the causticisation process at such an exorbitant cost is neither conducive to the interest of the caustic soda industry nor to that of the industries consuming caustic soda. This point was discussed at the public inquiry and the industry's representatives, especially the representatives of Tata Chemicals agreed that, for purposes of comparing the fair selling price of caustic soda with the landed cost of the imported product, it would be proper to adopt only the cost of caustic soda produced by electrolysis. We have, therefore, taken the cost of production of caustic soda by electrolytic process for the purpose of estimating the fair ex-works price.

Mettur Chemicals and Tata Chemicals produce all the three products covered by this inquiry, as mentioned in paragraph 4. Calico Mills and D.C.M. Chemicals do not have plants at present for the manufacture of bleaching powder. Moreover, Mettur Chemicals and Tata Chemicals are well established in this line of manufacture. We have, therefore, mainly taken the cost of production of these two firms as the basis for arriving at the representative costs of production of electrolytic caustic soda, bleaching powder and liquid chlorine for the industry as a whole, for the year 1951, but due account has also been taken of the cost figures relating to the other units as well. In making an estimate of representative costs, we have taken the following factors into account:-

(i) RAW MATERIALS

(a) *Caustic soda.* In 1946 the Board estimated that 1.8 tons of salt would be required per ton of caustic soda. Taking into consideration the purity of salt as obtained by the various manufacturers and the losses during the process of removal of sulphates by washing of salt instead of by the use of barium chloride, we have allowed 2 tons of salt per ton of caustic soda. The cost of salt to the different units varies from Rs. 15 to Rs. 45 per ton inclusive of the salt cess and Railway freight to works. We have considered the various factors which lead to these differences and have adopted a price of Rs. 35/- per ton of salt for the industry as a whole.

(b) *Bleaching powder:* For every cwt. of bleaching powder, we have allowed 0.35 cwt. of chlorine and 0.65 cwt. of slaked lime. Both the firms produce their own lime for bleaching powder. While Tata Chemicals produce lime in very appreciable quantities for the manufacture of soda ash, Mettur Chemicals have to restrict their production of lime to what is required for bleaching powder and bleach liquor. In fixing the price of lime for the manufacture of bleaching powder, due allowance has been made for this difference in the scale of production of lime.

(ii) POWER AND FUEL

(a) *Electricity:* We have assumed a consumption of 3,500 k.w.h. per ton of caustic soda. In this connection it may be stated that, apart from Mettur Chemicals who purchase their electricity from the Electricity Department of the Mettur Dam, all the other units generate their own power at a very high cost. We have taken this fact into consideration, in fixing the rate for electricity.

(b) *Steam.* In the public inquiry, it was agreed that a consumption of 14,500 pounds of steam per ton of caustic soda manufactured from "Hooker" type cells and a quantity of 19,000 pounds per ton of caustic soda produced from "Vorce" type cells, would be reasonable. As both these types of cells are in commission for the industry, we have adopted in our estimates an average quantity of 16,750 pounds of steam per ton of caustic soda.

(iii) OTHER CONVERSION CHARGES

These have been estimated by us on the basis of the actuals thrown up by the various units.

(iv) DEPRECIATION

Depreciation has been calculated at the normal income-tax rates on the calculated written down values. The extra depreciation allowance on machinery for the third shift, granted by Government since 1949-50 as a special temporary concession for five years, has not however been included in our cost estimates, because we believe that this was adopted as a temporary measure to assist the industry to build up reserves partly at least out of income-tax concessions. The item could be treated either as an element of cost, in which case the cost and the price of the commodity concerned would go up; or it could be treated as a special concession for income-tax purposes only, its effect in this case being to reduce the assessable income for this purpose. In the first case, the effect of the concession would be to place the burden of a higher price on the consumer, without prejudicially affecting the income assessable to income-tax. In the second case, while the price would not go up, the amount of income assessable to income-tax would be reduced to the extent of the concession. In either case, however, the industry would normally be able to enjoy the concession. In view, however, of the importance of holding in check the inflationary tendency of costs and prices at the present day, the Board considers that, on the whole, the preponderance of advantage would lie in excluding this concession from costs, it being left to be taken into account only for the purpose of assessing income liable to income-tax. The average depreciation worked out on the values of the plants at the Mettur Chemicals and the Tata Chemicals has been adopted in our estimates.

(v) INTEREST ON WORKING CAPITAL

The Board in its previous Report allowed interest at 4 per cent on a working capital equivalent to 6 months' cost of production. We are given to understand that, except for the direct consumable stores at the cell house, *viz.*, diaphragms and electrodes, the other materials and stores are available in plenty indigenously. Having regard to this fact, we feel that an amount equivalent to 3 months' cost of production should be sufficient to cover the working capital. Interest at 4 per cent on this working capital which works out to 1 per cent on the cost of production, has been allowed in our estimates.

(vi) CREDIT FOR CHLORINE AND HYDROGEN

(a) Hydrogen: Hydrogen is being used for the manufacture of synthetic hydrochloric acid by almost all the manufacturers, while units having plants for the hydrogenation of oil use it for the manufacture of Vanaspati. As the use in the latter process is not a common feature for the industry as a whole, we have given credit for hydrogen after taking into consideration the above facts.

(b) *Chlorine:* Credit for chlorine in the cost of caustic soda has been given on the basis of generation.

(vii) RETURN ON BLOCK

We have allowed 10 per cent return on block at original values. In assessing the return, we have been guided by the estimated value of the block at the Mettur Chemicals and at the Tata Chemicals. Return at 10 per cent on the fixed block works out to approximately 18 per cent on the net cost of production per ton of caustic soda, while the return, inclusive of the allowance for waste chlorine, works out to 16 per cent and 29 per cent on the net cost of production per cwt. of bleaching powder and liquid chlorine respectively. The higher percentage in the case of liquid chlorine is as a result of a lower production in comparison with the rated capacity of the plant which cannot be worked to the optimum owing to the impracticability of making full utilization of the chlorine gas under present circumstances. Even though such profit margins may appear to be high we may point out that the investment in fixed block is bound to be high relatively to the turnover for any basic chemical industry of this nature. Having regard to this fact, we consider that a 10 per cent return on block at original values is not unreasonable.

(viii) COST OF WASTE CHLORINE

In the peculiar circumstances in which the industry has been placed in this country, the demand for caustic soda is growing up, while the demand for chlorine is fairly limited. Therefore, it has not been possible for the industry to utilise the entire chlorine generated, as a result of which a certain quantity of chlorine is being wasted, the percentage of wastage varying from unit to unit. We have given adequate consideration to this matter and have decided that, for the present, it would be proper to load the cost of the waste chlorine on to the cost of utilised chlorine. On the basis of the information made available to us at the inquiry, we estimate the production of indigenous caustic soda during 1951 at 12,700 tons, which will yield approximately 11,270 tons of chlorine as a co-product. The overall demand for chlorine either as liquid chlorine or as chlorine compounds has been estimated by us at 9,000 tons, exclusive of 3,000 tons of chlorine produced and consumed by the paper mills. Even though the estimated offtake of chlorine works out to 80 per cent of the generated quantity, some allowance has to be made for the chlorine which might be imported in the form of bleaching powder.

We estimate that the demand for chlorine will be to the extent of 75 per cent of the quantity of chlorine generated, or that about 25 per cent of the chlorine produced will have to be wasted. Based on the data, obtained at the Mettur Chemicals and the Tata Chemicals, the extra differential on account of the cost, including return on block, of this waste chlorine works out to Rs. 3.80 per cwt. of chlorine utilised. This will increase the cost of bleaching powder and liquid chlorine by Rs. 1.33 and Rs. 3.80 per cwt. respectively. This extra differential is being shown separately in our cost estimates.

Based on the foregoing, the fair ex-works prices as estimated by us, for caustic soda, bleaching powder and liquid chlorine, are shown in the statement given below. As the manufacturers' representatives desired that the cost details should be kept confidential, such details are not shown in this Report. We are, however, forwarding a detailed cost report to Government as a confidential enclosure to this Report.

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(ix) FREIGHT DIFFERENTIAL

The manufacturers have represented in their replies to the questionnaire that a provision of As. 8 per cwt. of caustic soda and bleaching powder should be made on account of the difference between the railway freight upto consuming centres of the indigenous products and the imported products, on the ground that the imported products could be landed at any of the Indian ports without any extra expenditure. We feel that there is justification for this claim. The Board, in its previous inquiry, allowed As. 4 per cwt. of caustic soda and bleaching powder on this account. We consider that this amount is reasonable. Adding this freight differential, the final fair selling prices per cwt. of the three products at the consuming centres work out as under:

	Caustic soda per cwt.	Bleaching powder per cwt.	Liquid chlorine per cwt.
	Rs. a. p.	Rs. a. p.	Rs. a. p.
Fair ex-works price as estimated by us as above.	26 14 2	21 10 7	46 0 8
Add differential for freight.	0 4 0	0 4 0	-
Total fair selling price at the consuming centres	27 2 2	21 14 7	46 0 8

Comparison of landed costs of imported products with the fair selling prices of the indigenous products.

16. We have discussed in paragraph 14 above, the current c.i.f. prices of caustic soda and bleaching powder. The following table gives the comparison of the landed costs of the imported products with the fair selling prices of the indigenous articles.

STATEMENT SHOWING BOARD'S ESTIMATE OF FAIR EX-WORKS PRICES FOR (i) ELECTROLYTIC CAUSTIC SODA (SOLID), (ii) BLEACHING POWDER AND (iii) LIQUID CHLORINE.

Product	Electrolytic caustic soda (solid)	Bleaching powder	Liquid Chlorine
Items	Cost per ton	cost per cwt.	cost per cwt.
1	2	3	4
	Rs.	Rs.	Rs.
1. Raw Materials	74.12	7.72	10.00
2. Power and fuel			
(a) Power	210.00	0.36	2.40
(b) Steam	58.63	-	-
(c) Fuel oil	23.00	-	-
(d) Water	2.00	-	-
3. Labour	40.00	1.23	3.33
4. Repairs and maintenance 5. Consumable Stores	54.00	1.03	4.59

1	2	3	4
6. Establishment	38.00	1.34	2.60
7. Depreciation	89.25	1.58	7.32
8. Other overheads	15.00	0.93	1.82
9. Packing charges	26.00	3.16	-
Total cost	630.00	17.35	31.96
10. *Less* credit for recoveries-			
(a) Chlorine 0.8875 tons at Rs. 200/-	177.50	-	-
(b) Other products	1.50	-	-
Net cost of production	451.00	17.35	31.96
11. Interest on working capital	4.51	0.17	0.32
12. Return on fixed block	82.23	2.81	9.96
Total	537.74	20.33	42.24
13. Extra differential for waste chlorine	-	1.33	3.80
14. Fair ex-works price	537.74	21.66	46.04
Or	Rs. 26-14-2 per cwt.	Rs. 21-10-7 per cwt.	Re. 0-6-7 per lb.

COMPARISON OF LANDED COSTS WITH FAIR SELLING PRICES

	Caustic soda per cwt.	Bleaching powder per cwt.	Liquid chlorine per cwt.
1	2	3	4
	Rs. a. p.	Rs. a. p.	Rs. a. p.
(i) Fair ex-works price	26 14 2	21 10 7	46 0 8
(ii) *Add* freight differential	0 4 0	0 4 0	
A. Fair selling price at the consuming centres	27 2 2	21 14 7	46 0 8

1	2	3	4
(i) C.i.f. price	20 0 0	18 12 5	31 0 1
(ii) Customs duty	6 3 10	(Free)	14 8 11
(iii) Clearing charges	0 9 2	0 9 2	0 8 0
B. Total landed cost	26 13 0	19 5 7	46 1 0
C. Difference between fair selling price and landed cost (A-B)	0 5 2	2 9 0	-
D. Difference as a-			
(i) percentage on Tariff value of Rs. 24/-	1.3	-	-
(ii) percentage on c.i.f. value	-	13.6	-

Measure of protection.

17. (a) *Caustic soda:* The comparative figures given in the preceding paragraph indicate that the preferential rate of 26 per cent on imports of caustic soda from the U.K. needs to be increased by 1.3 per cent in order to equalize their landed cost with the fair selling price of the indigenous article. We, however, consider that this small difference should be made up by the indigenous manufacturers by effecting the necessary economies in costs and not by raising the duty, particularly because caustic soda is used in many industries as a basic material. As we have pointed out earlier, it is possible for the manufacturers to effect economies in various ways and, more specially, by making a fuller utilization of the chlorine gas. We, however, consider that the industry in its present stage should be protected. For this purpose, we recommend that the present revenue duty should be converted into a protective duty. As stated earlier, the most important source of imports of caustic soda at present is the U.K. Such imports are subject to a preferential rate of 26 per cent *ad valorem* on a tariff value of Rs. 24 per cwt. The current c.i.f. price is, however, Rs. 20 per cwt. This was the information given to us at the time of the public

inquiry. Since the c.i.f. price of caustic soda is liable to fluctuations in the present condition of economic instability, which would necessitate a change in the tariff value from time to time, we think it desirable to fix the amount of protection by means of a specific duty. Accordingly, we recommend that the rate of protective duty on imports of caustic soda from the U.K. or a British Colony should be Rs. 6-4-0 (that is, 26 per cent of Rs. 24) per cwt. If we are to maintain the existing margins of preference, the standard rate of duty should be Rs. 8-10-0 (that is, 36 per cent of Rs. 24) per cwt. and the preferential rate of duty on imports from Burma should be Rs.2-6-0 (that is, 10 per cent of Rs. 24) per cwt. of caustic soda. It will be noted that, if a specific duty is imposed, there will be no need to adopt a tariff value for caustic soda.

(b) *Bleaching powder:* This article is now imported duty-free. The comparative figures given in the preceding paragraph indicate that a duty of Rs. 2-9-0 per cwt. would be required to equalize the landed cost of the imported bleaching powder from the U.K. with the fair selling price of the indigenous article. We consider that the bleaching powder industry should be protected by the imposition of a duty on the imported article. For the same reasons as have been given in the preceding sub-paragraph (a), we consider it desirable that the duty should be specific. We, however, believe that, like the cost of caustic soda, the cost of bleaching powder also can be reduced by making a fuller utilization of the chlorine gas. It may also be pointed out that the proposed duty, by discouraging imports of bleaching powder, will tend to encourage the consumption of indigenous chlorine either in the form of bleaching powder or in the form of liquid chlorine.

Having regard to these factors, we recommend that a protective duty of Rs. 2-8-0 per cwt. should be imposed on the imported bleaching powder. As practically all the imports of bleaching powder come from the U.K., there will be no justification for levying the duty at different rates according to the source of imports. The rate of Rs. 2-8-0 per cwt. of bleaching powder should, therefore, be the standard rate uniformly applicable to imports from all sources.

(c) *Liquid chlorine:* So far as liquid chlorine is concerned, it has been under severe import control since 1941-42 and there were negligible or no imports for the last ten years. But, the import control policy is governed by balance of payment consideration from time to time. Should the article be placed on O.G.L. or its imports be liberalised, the stability of the indigenous industry would be jeopardised. We, therefore, consider that the position of the industry should be adequately safeguarded by means of a protective duty. As there have been no imports of liquid chlorine in recent months, we were not able to obtain the figures of current c.i.f. prices of the article. We have, however, received from the Imperial Chemical Industries (India), Ltd., some information regarding the c.i.f. prices current in 1949. According to this information, the c.i.f. price of liquid chlorine in that year was Rs. 31-0-1 per cwt. After adding customs duty at Rs. 14-8-11 (that is, 26 per cent on a tariff value of Re. 0-8-0 per lb.) and clearing charges at Re. 0-8-0 per cwt., the landed cost worked out to Rs. 46-1-0 per cwt. As will be seen from the table given in paragraph 16 above, the fair selling price of the indigenous liquid chlorine is Rs. 46-0-8, which is practically equal to the duty-paid landed cost of the imported article in 1949. It would, therefore, appear that the existing duty should be sufficient to protect indigenous liquid chlorine against the competition of the imported article. We, therefore, recommend that the existing preferential revenue duty of 26 per cent *ad valorem* on a tariff value of Re. 0-8-0 per lb. of liquid chlorine imported from the U.K. should be converted into an approximately equal specific duty of Rs. 14-8-0 per cwt., which should be made protective. If we are to maintain the existing margins of preference, the standard rate of the protective duty should be Rs. 20-2-0 (*i.e.*, 36 per cent on a tariff value of Re. 0-8-0 per lb.) per cwt. and the preferential rate on imports from Burma should be Rs. 5-10-0 (*i.e.*, 10 per cent on a tariff value of Re. 0-8-0 per lb.) per cwt.. In this case also it will be noted that, with the imposition of a specific duty, there would be no need for adopting a tariff value.

(*d*) As indicated in paragraphs 9 and 10 above, there is at present a large scope for the expansion of the caustic soda and bleaching powder industry, because the installed capacity and actual production fall far short of the demand. We have also already mentioned that the desirability of expanding the industry is fully realized in the country and that a number of extension projects have been taken in hand. Having regard to these factors, we consider that the duration of protection to this industry should be such that its position may be fairly stabilised for a reasonable period of time. Accordingly, we recommend that the protective duties proposed by us should be in force until 31st March, 1954. The duties recommended by us are based upon the current c.i.f. prices and our estimates of fair selling prices in 1951. There is no reason to apprehend that the c.i.f. prices may go down within the next three years. But, if, owing to unexpected developments, the c.i.f. prices happen to fall substantially below the level we have taken into account for our present purpose, so as to jeopardize the stability of the indigenous industry, it would be possible to meet the situation by suitably raising the rates of duties under section 4(1) of the Indian Tariff Act.

Proposed changes in the Customs Tariff Schedule.

18. If our recommendations are accepted by Government, the Indian Customs Tariff will have to be amended as indicated on next page.

Item No.	Name of the article	Nature of duty	Standard rate of duty	Preferential rate of duty if the article is the produce or manufacture of			Duration of of protective rates of duty
				The United Kingdom	A British Colony	Burma	
28	Chemicals, Drugs and Medicines, all sorts not otherwise specified						
	(i) Caustic soda	Protective	Rs.8-10-0 per cwt.	Rs.6-9-0 per cwt.	Rs.6-4-0 per cwt.	Rs.2-6-0 per cwt.	31st March, 1954.
	(ii) Liquid chlorine	Protective	Rs.20-2-0 per cwt.	Rs.14-6-0 per cwt.	Rs.14-8-0 per cwt.	Rs.5-10-0 per cwt.	31st March, 1954.
28(1)	Bleaching paste and bleaching powder	Protective	Rs.2-8-0 per cwt.	-	-	-	31st March, 1954.

Eligibility for protection.

19. So far as the first condition to be fulfilled by the industry for grant of protection or assistance is concerned, we are satisfied that the industry is run on sound business lines. All the principal raw materials required by the industry are available in the country. There is also a large home market for caustic soda and this market is bound to increase as industrial development proceeds. And, although the present demand for chlorine and chlorine products is limited, there are considerable possibilities of fuller utilisation of chlorine with an all-round industrial development in the country. We are, therefore, satisfied that the industry possesses natural advantages which will enable it to reduce costs and develop sufficiently within a reasonable time to be able to carry on successfully without protection or State assistance. Moreover, caustic soda is a basic heavy chemical required in the manufacture of various products and, therefore, it is an industry which should be developed in the

national interest. As regards the probable cost of such protection or assistance to the community, it may be pointed out that, under the proposed scheme of protection, the rates of duty on caustic soda and liquid chlorine would remain unaltered, thus entailing no additional burden for the community; and that the proposed duty of Rs. 2-8-0 per cwt. of bleaching powder, which amounts to less than 12 per cent on the current c.i.f. price, would produce a comparatively small incidence on the cost of processing in the consuming industries, such as paper, textiles, etc. We, therefore, consider that the industry fulfils the conditions of eligibility for protection.

Other forms of assistance.

20 (a) (i) Besides protective duties and subsidies, the industry has asked for additional assistance by way of reduction of railway freights on salt, coke, coal, limestone as well as the finished products. As this is a basic heavy chemical industry and as it is desirable in the national interest that the industry should develop, we have no doubt that the railway authorities will favourably consider the proposals of the industry on the question of reduction of railway freights. As a matter of fact, we have been informed that in one or two cases, a concession in railway freight has already been granted. And we suggest that the manufacturers should make the necessary representations to the railway authorities concerned.

(ii) Tata Chemicals have represented to us that they are unable to obtain supplies of raw materials owing to the shortage of wagons and locomotives. We suggest that this matter should also be taken up with the authorities concerned.

(iii) Tata Chemicals have further requested that Government should arrange to supply their full requirements of M.S. sheets used in packing fused caustic soda. They have pointed out that during the last four years they have not been able to procure adequate quantities of such sheets. We recommend that the Ministry of Industry and Supply should arrange to allocate more adequate supplies of M.S. sheets to the industry.

(b) The manufacturers of caustic soda have also asked for protection by means of import control. In fact, as stated in paragraph 12 above, such import control has been in force for the last one or two years in respect of caustic soda, bleaching powder, liquid chlorine and zinc chloride. We have, however, to point out that import control is maintained primarily on balance of payments grounds and is not intended to serve as an additional form of protection. We recognise that even the objective of conserving the foreign exchange resources of the country requires that the quantum of imports should be limited to what is needed to bridge the gap between the domestic production and consumption. We think, however, that the present system of import control takes due account of this principle, and we have no doubt that in assessing the import requirements of the country in respect of caustic soda and other products for the purpose of import control, the conclusions reached by the Board with regard to the domestic demand, the rated capacity and actual production of this industry will be duly taken into consideration. This should amply safeguard the interests of the domestic industry and we, therefore, consider it unnecessary to make a further recommendation on this point.

(c) The manufacturers have brought to our notice that the cost of a primary raw material like salt has been recently increased by the levy of a cess which was imposed when the excise duty on salt was abolished. We have been informed that the cess is levied at two rates, *viz.* (a) at Re. -/3/6 per md. on the production at all Government-owned salt works and (b) at Re. -/2/- per md. on the production at all privately-owned salt works. We understand that the Salt Experts' Committee in their Report dated 27th April, 1950 have recommended that a rebate on the cess should be allowed to the alkali industry and that the matter is receiving the attention of the Salt Controller. As the grant of a rebate on the salt cess will assist this important industry in reducing its costs of production, we recommend that Government should sympathetically consider this matter and take an early decision on it.

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(d) When our Report was practically ready, D.C.M. Chemical Works, Delhi, submitted a note regarding the use of hydrochloric acid as a substitute for sulphuric acid. In this note, it has been pointed out that there is a very important outlet for the utilisation of electrolytic chlorine in the manufacture of hydrochloric acid which could be used with advantage as a proper substitute for sulphuric acid in a number of important industries such as textile and tanning industries. It has also been pointed out that this substitution while being advantageous for the growth of the electrolytic caustic soda industry, will also result in a reduction in the imports of sulphur from the dollar area, thereby saving dollar exchange to the value of $.100,000. To facilitate the substitution of hydrochloric acid for sulphuric acid, it has been requested that certain modifications in the existing railway freight structure should be made. At present, hydrochloric acid has to pay a higher freight than sulphuric acid and consequently the consumer cannot obtain hydrochloric acid at a price which can compete with that of sulphuric acid. It is stated that, for the purpose of substitution, 2.2 tons of hydrochloric acid are required for every ton of sulphuric acid and that, on this basis, the freight on hydrochloric acid should not be more than 45 per cent of the freight on sulphuric acid. We have not had the opportunity to have this matter examined from the technical point of view. We, however, suggest that the proposal should be examined by the D.G.I. & S. and that, if they are satisfied about its practicability, they should approach the Railway Board to give a favourable consideration to the request for a reduction of freight on hydrochloric acid.

Summary of conclusions and recommendations.

21. Our conclusions and recommendations may be summarised as under:-

(i) This inquiry covers caustic soda, bleaching powder and liquid chlorine. In addition to these, due consideration has been given to ancillary products such as bleach liquor, hydrochloric acid and zinc chloride in the production of which large quantities of chlorine are used. [Paragraph 4]

(ii) The present annual demand for caustic soda is estimated at 60,000 tons, which is likely to go up to 72,000 tons in the near future. [Paragraph 9(a)]

(iii) The present annual demand for chlorine is 12,000 tons, which is expected to go up to 15,000 tons in the coming three years. [Paragraph 9(b)]

(iv) The manufacturers should take early steps for balancing their plants so as to be able to make a fuller utilisation of chlorine by manufacturing suitable chlorine products in the country. [Paragraph 10(e)]

(v) There is some scope for improvement in the quality of the indigenous caustic soda and we recommend that the manufacturers should take necessary steps to bring up the quality to the standards of the imported article. [Paragraph 11(a)]

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(vi) The indigenous bleaching powder is, on the whole, suitable for the requirements of the consuming industries but there is considerable scope for improving its quality. The manufacturers have assured the Board that they would make all possible efforts to standardise the quality of lime and improve the process of manufacture so as to produce more concentrated and stable bleaching powder. [Paragraph 11 (b)]

(vii) The quality of indigenous liquid chlorine and bleach liquor is found to be quite satisfactory for all purposes. [Paragraph 11 (c)]

(viii) We recommend the following protective specific duties to be in force until 31st March, 1954:-

Name of article	Standard rate of duty	Preferential rate of duty if the article is the produce or manufacture of	
		The U.K. or a British Colony	Burma
(i) Caustic Soda	Rs. 8-10-0 per cwt.	Rs. 6-4-0 per cwt.	Rs. 2-6-0 per cwt.
(ii) Bleaching powder	Rs. 2-8-0 per cwt.		-
(iii) Liquid chlorine	Rs. 20-2-0 per cwt.	Rs. 14-8-0 per cwt.	Rs. 5-10-0 per cwt.

[Paragraph 17(a), (b), (c) & (d)]

(ix) If our recommendations regarding the measure of protection are accepted by Government, the First Schedule to the Indian Customs Tariff should be amended as shown in Paragraph 18.

(x) We are satisfied that the industry is eligible for protection for reasons stated in paragraph 19.

(xi) The manufacturers should make the necessary representations to the railway authorities concerned on the question of reduction of railway freights on salt, coke, coal, limestones and the finished products. [Paragraph 20 (a) (i)]

(xii) As regards allocation of adequate wagons and locomotives, we suggest that the matter should be taken up with the authorities concerned. [Paragraph 20(a) (ii)]

(xiii) The Ministry of Industry and Supply should arrange to allocate more adequate supplies of M.S. sheets to the industry. [Paragraph 20(a) (iii)]

(xiv) As the grant of a rebate on the salt cess will assist this important industry in reducing its costs of production, we recommend that Government should sympathetically consider this matter and take an early decision on it. [Paragraph 20 (c)]

(xv) We suggest that the proposal made by D.C.M. Chemicals regarding the substitution of hydrochloric acid in the place of sulphuric acid for certain industrial uses should be examined by the D.G.I. & S. and that, if they are satisfied about its practicability, they should approach the Railway Board to give a favourable consideration to the request for a reduction of freight on hydrochloric acid. [Paragraph 29 (d)]

Acknowledgements.

22. We wish to acknowledge the help we received from the various producers, importers and consumers who furnished us with information and gave evidence before us. Our thanks are also due to Dr. D.C. Sen, Deputy Development Officer, D.G.I. & S., Dr. A. Nagaraja Rao, Chief of Industries Division, Planning Commission, Dr. S.R. Ramachandran, Deputy Director, Textile Commissioner's Office, Dr. R.K. Trivedi, Mr. S.S. Mehta, Board's Technical Adviser and Mr. S.V. Rajan, Assistant Cost Accounts Officer attached to the Board, for the assistance they gave us in connection with this inquiry.

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H.L. DEY,

President

B.V. NARAYANASWAMY,

Member.

M.A. MULKY,

Secretary.

Bombay,

Dated 30th December, 1950.

APPENDIX I

(*Vide* paragraph 1)

GOVERNMENT OF INDIA
MINISTRY OF COMMERCE

New Delhi, the 29th June, 1949.

RESOLUTION

No. 32(1)-T.B./49.- In their Resolution No. 218-T(55)/45 dated the 3rd November 1945, the Government of India in the Department of Commerce referred to the Tariff Board an application for assistance or protection received from the Caustic Soda and Bleaching Powder industry. The Board in their Report considered that the industry qualified for the grant of protection, and recommended *inter-alia* that Mettur Chemical & Industrial Corporation, the only applicant for protection, should be given a subsidy. This recommendation was accepted by Government subject to certain conditions as announced in their Resolution No.218-T(19)/47 dated the 22nd March 1947. On a further examination by the Tariff Board of the accounts of the Company, as contemplated in paragraph 4 of Resolution No.218-T(19)/47 dated the 22nd March 1947, it was found that the conditions for the grant of the subsidy were not satisfied.

2. The Government of India have now re-examined the matter and have decided to refer to the Tariff Board for investigation certain applications received for assistance or protection to the Caustic Soda and Bleaching Powder industry. In making its enquiry the Board will be guided by the principles laid down in para. 5 of the Resolution No. 218-T(55) 45, dated the 3rd November 1945.

3. Firms or persons interested in this industry or industries dependent on the use of these articles, who desire that their views should be considered by the Tariff Board should address their representations to the Secretary, to the Board, Contractor Building, Nicol Road, Ballard Estate, Bombay. 1.

APPENDIX II

(*Vide* paragraph 5)

List of firms, persons and associations to whom the Board's questionnaires were issued and those who replied or sent memoranda.

*Those who have sent detailed replies to the questionnaire.

@Those who have replied stating that either they are not dealing in these chemicals or are not interested.

(a) PRODUCERS:

* 1. Mettur Chemical & Industrial Corporation Ltd.,
Mettur Dam R.S., Salem District,
Madras State.

* 2. Tata Chemicals Limited,
Bombay House, Bruce Street,
Fort, Bombay.

* 3. D.C.M. Chemical Works,
P.O. Box No. 211, Delhi.

* 4. Calico Mills,
Chemical Division,
P.O. Box No.12, Ahmedabad.

* 5. Alkali & Chemical Corporation of India Ltd.,
18, Strand Road, Calcutta.

* 6. Rohtas Industries Limited,
Dalmianagar, Dehri-on-Sone Rly. Station,
E.I.Rly., Bihar.

@ 7. Bombay Chlorine Products Ltd.,
11, Bruce Street, Fort, Bombay.

@ 8. Hindusthan Heavy Chemicals Ltd.,
Hindusthan Buildings,
4, Chittaranjan Avenue, Calcutta.

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(b) IMPORTERS:

* 1. Imperial Chemical Industries, (India) Ltd.,
P.O. Box No. 132, 18, Strand Road,
Calcutta.

@ 2. Volkart Brothers,
Graham Road, Ballard Estate, Bombay.

* 3. New Standard Chemicals Co. Ltd.,
281, Samuel Street, Vadgadi, Bombay.

4. Impex (India) Ltd.,
Mubarak Manzil, Apollo Street, Fort,
Bombay.

5. K. Nanavati & Co. Ltd.,
16, Apollo Street, Fort, Bombay.

@ 6. P.K. Japee & Co.,
171, Nyniappa Naick Street, Madras.

@ 7. Dadajee Dhackjee & Co.,
197, Govindappa Naick Street, Madras.

@ 8. Kroz & Co.,
Podar Chambers, Parsi Bazar Street, Fort,
Bombay.

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9. B.R. Herman & Mohatta (India) Ltd.,
19, British Indian Street, Calcutta.

@10. Biddle Sawyer & Co., (India) Ltd.,
Ponjanji Building, Frere Road, Bombay.

11. Tribhuvandas Khimji & Bros.,
13, Princess Street, Bombay.

12. Cotton Agents Ltd.,
Imperial Bank Annexe, Bank Street,
Bombay.

13. M. Saraiya & Co.,
Prospect Chambers, Hornby Road, Fort,
Bombay.

14. Hazarat & Co.,
People's Building, Sir P.M. Road,
Fort, Bombay.

(b) IMPORTERS *(contd.)*

15. General Mill Stores Co. Ltd.,
Ali Chambers, Tamarind Lane, Fort,
Bombay.

16. Firoz Trading Co. Ltd.,
Kumar Building,
Cowasji Patel Street, Fort, Bombay.

17. Bajaj Brothers Ltd.,
Kalbadevi Road, Round Building,
Bombay.

@18. Gordon Woodroffe & Co., (Madras) Ltd.,
1-21, North Beach Road, Madras.

*19. The Bombay Kariana, Colour and Chemical
Merchants' Association, 222-A, Samuel Street,
Bombay 3.

(c) CONSUMERS:

(i) *Soap manufacturers:*

* 1. Lever Brothers (India) Ltd.,
Scindia House, Ballard Estate, Bombay.

* 2. Godrej Soaps Limited,
P.O. Jacob Circle, Bombay 11.

* 3. Kamala Soaps Limited,
Opp.: Baroda College, Baroda.

* 4. Modi Soap Works,
P.O. Modinagar, Meerut.

* 5. Kerala Soap Institute,
Kozhikode, South India.

* 6. All India Soap Makers' Association,
P-11 Mission Row Extension, Calcutta.

* 7. South India Soap Makers' Association,
Edacochi P.O., United States
of Travancore and Cochin, South India.

(ii) *Textile manufacturers:*

* 8. Elphinstone Spinning & Weaving Mills Ltd.,
Kamani Chambers, 32, Nicol Road,
Ballard Estate, Bombay.

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(c) CONSUMERS *(contd.)*

(ii) *Textile Manufacturers:*

* 9. India United Mills Co. Ltd.,
Indu House, Dougall Road,
Ballard Estate, Bombay.

10. Morarjee Goculdas Spinning & Weaving Mills Ltd.,
Supari Baugh Road, Parel, Bombay.

*11. Buckingham & Carnatic Co., Ltd.,
P.O. Box No. 66, Madras.

*12. Indian Bleaching, Dyeing & Printing Works Ltd.,
P.B. 1038, 29 Churchgate Street, Fort, Bombay.

@13. Sri Kothandaram Weaving Mills,
Madura.

*14. Mill Owners' Association,
Elphinstone Building, Churchgate Street,
Bombay.

*15. Ahmedabad Mill Owners' Association,
Post Box No. 7, Ahmedabad.

16. Madhya Pradesh Mill Owners' Association,
Dhantaway Chambers, Gita Grounds,
Sitabuldi, Nagpur.

*17. Southern India Millowners' Association,
Coimbatore, Madras State.

*18. Bengal Millowners' Association,
2, Church Lane, Calcutta.

(iii) *Paper manufacturers:*

*19. Titaghur Paper Mills Co. Ltd.,
Chartered Bank Buildings, Calcutta 1.

*20. Mysore Paper Mills Ltd.,
Bhadravati, Mysore State Railway.

*21. Sirpur Paper Mills Ltd.,
Vishwa Bhavan, 364, Himayatnagar,
Hyderabad (Deccan).

*22. Indian Paper Mills Association,
23-B, Netaji Subhas Road, Calcutta.

*23. Indian Paper Makers' Association,
Royal Exchange, Post Box No. 280., Calcutta.

(c) CONSUMERS *(concld.)*

(iv) *Vegetable ghee and oil refining industries:*

*24. Hindustan Vanaspati Manufacturing Co. Ltd.,
Scindia House, Ballard Estate, Bombay.

*25. The Tata Oil Mills Co. Ltd.,
Bombay House, Bruce Street, Fort, Bombay.

@26. Government Oil Factory,
Kozhikode, South India.

27. Travancore Oil Mills Ltd.,
Allepy.

28. Vanaspati Manufacturing Association of India,
Arya Bhawan, Ballard Estate, Bombay.

(v) *Rayon manufacturers:*

*29. National Rayon Corporation Ltd.,
Ewart House, Bruce Street, Bombay 1.

*30. Travancore Rayons Ltd.,
Rayonpuram, Perambavour, North Travancore.

@31. Sirsilk Ltd.,
Vishwa Bhawan, P.O.Box No. 168,
364, Himayatnagar, Hyderabad Dn.

(vi) *Miscellaneous consumers:*

32. Techno Chemical Industries,
Calicut.

*33. Director of Public Health, Government of Bombay,
Poona 1.

*34. Commissioner, Corporation of Madras,
Madras.

*35. Indian Institute of Science,
Bangalore.

(d) ASSOCIATIONS:

*1. Indian Chemical Manufacturers' Association,
23-B, Netaji Subhas Road, Calcutta.

2. Association of British Chemical Manufacturers,
Janmabhoomi Chambers, Fort Street,
Ballard Estate, Bombay.

APPENDIX III
(*Vide* paragraph 5)

List of persons who attended the public inquiry on 28th and 29th November, 1950.

PRODUCERS:

1.	Shri V. Seshasayee	Representing	The Mettur Chemical and Industrial Corporation Ltd., Mettur.
2.	Shri S. Ramaswamy		
3.	Shri T.M. Krishna Rao		
4.	Shri K.A.D. Naoroji	"	Tata Chemicals Ltd., Mithapur
5.	Shri J.D. Choksi		
6.	Shri C.R. Rao		
7.	Shri J.C. Dastur		
8.	Shri J.N. Dadabhoy		
9.	Shri K.S. Mody		
10.	Shri M.B. Bhagwat		
11.	Shri A.K. Banerji		
12.	Shri Charat Ram	"	The D.C.M. Chemical Works, Delhi.
13.	Shri L.R. Gautam		
14.	Shri C.R. Subramanian		
15.	Shri T.R. Pareek		
16.	Shri J.P. Chatterji		
17.	Shri J.A. Gandhi	"	The Calico Mills, Chemical Division, Ahmedabad.
18.	Shri V.S. Mankikar		
19.	Mr. W.E. Wilkie Brown	"	The Alkali and Chemical Corporation of India Ltd., Calcutta.
20.	Shri V. Podder	"	The Rohtas Industries Ltd., Dalmianagar.

IMPORTERS:

1.	Mr. W.E. Wilkie Brown	Representing	Imperial Chemical Industries (India) Ltd., Calcutta.
2.	Shri Keshavlal Naranjee	"	The New Standard Chemicals Co. Ltd., Bombay and Bombay Kariana, Colour and Chemical Merchants' Assn., Bombay.

CONSUMERS:

1. 2.	Mr. J.G. Brocklehurst Shri S. Srinivasan	"	Lever Brothers (India) Ltd., Bombay & Hindustan Vanaspati Mfg. Co. Ltd., Bombay.
3.	Shri K.R. Gokulam	"	Goderj Soaps Ltd., Bombay.
4.	Dr. J.S. Badami	"	Indian Soap and Toileteries Makers' Assn., Calcutta.
5.	Shri J.S. Patel	"	India United Mills, Bombay.
6.	Shri D.R. Modi	"	Indian Bleaching, Dyeing & Printing Works Ltd., Bombay.
7.	Shri Narottam P. Hutheesing	"	Ahmedabad Millowners' Assn., Ahmedabad.
8.	Shri V. Podder	"	Indian Paper Mills Association, Calcutta.
9.	Mr. P.T. John	"	Tata Oil Mills Co. Ltd., Bombay.

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CONSUMERS *(contd.)*

10.	Dr. M.D. Parekh	Representing	National Rayon Corporation Ltd., Bombay.
11.	Shri Sutramdas	"	Travancore Rayons Ltd., Rayonpuram, Perambavoor.

ASSOCIATIONS:

	Dr. L.A. Bhatt	"	Indian Chemical Manufacturers' Association, Calcutta.

GOVERNMENT OFFICIALS :

1.	Dr. D.C. Sen, Deputy Development Officer.	"	Directorate General of Industries and Supplies, New Delhi.
2.	Dr. A. Nagaraja Rao, Chief of Division, Industries.	"	Planning Commission, New Delhi.
3.	Dr. S.R. Ramachandran, Deputy Director.	"	Office of the Textile Commissioner, Bombay.

OTHERS:

Dr. R.K. Trivedi,M.Sc., D.Sc. (France).

APPENDIX IV

[*Vide* paragraph 12 II (a), (b) & (c)]

Statement showing the import control policy followed by Government in respect of caustic soda, bleaching powder and liquid chlorine during the different periods from July-Dec., 1948 up-to-date.

(a) CAUSTIC SODA

July to December 1948.

S.No. of I.T.C. Schedule	Description	Import Tariff No.	Dollar Area	Hard Currency Countries	Sweden & Switzerland	Sterling & Soft Currency Countries	Remarks
110	Chemicals falling under items Nos. 28, 28(6), 28(7) and 28(8) of the First Schedule to the Indian Tariff Act, 1934 and Drugs and Medicines falling under item No. 28(8) of that Schedule in packings upto and inclusive of 28 lbs. for goods in substance, and upto and inclusive of one winchester quart for goods in liquid, but excluding articles specified in any other serial of this Schedule.	28 28(6) 28(7) 28(8)	Liberally (for new comers)	Liberally (for new comers)	* O.G.L.XII	O.G.L.XI	* O.G.L. XII was cancelled on 31st Dec., 1948.

January - June 1949.

S.No. of I.T.C. Schedule	Description	Import Tariff No.	Dollar Area	Hard Currency Countries	Sterling & Soft Currency Countries.	Remarks
110	Chemicals falling under items Nos. 28, 28(6), 28(7) and 28(8) of the First Schedule to the Indian Tariff Act, 1934 and Drugs and Medicines falling under item Number 28(8) of that Schedule in packings upto and inclusive of 28 lbs. for goods in substance, and upto and inclusive of one winchester quart for goods in liquid, but excluding articles specified in any other serial of this Schedule.	28 28(6) 28(7) 28(8)	—	—	* O.G.L. XI	* O.G.L. XI was cancelled on 5th May, 1949.

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July - December 1949.

S.No. of I.T.C. Schedule	Description	Import Tariff No.	Western Zone of Germany	Switzerland	Soft Currency Countries	Remarks
110	Chemicals falling under items Nos. 28, 28(6), 28(7) and 28(8) of the First Schedule to the Indian Tariff Act, 1934 and Drugs and Medicines falling under item No. 28(8) of that Schedule in packings upto and inclusive of 28 lbs. for goods in substance, and upto and inclusive of one Winchester quart for goods in liquid, but excluding articles specified in any other serial of this Schedule.	28, 28(6) 28(7) 28(8) 28(16) 28(18) 28(19) 28(20) 28(21) 28(29)	Subject to essentiality and monetary ceiling.	Subject to essentiality and monetary ceiling.	* O.G.L. XV	* O.G.L. XV was cancelled on 25th August, 1949.

January - June 1950.

" Licences will be issued for imports *from soft currency countries only* subject to the following conditions:-

(a) The maximum c.i.f. and maximum selling prices of caustic soda under the licence should not be more than the prices mentioned below:-

	Maximum c.i.f. Prices Indian Port	Maximum Selling Prices
Caustic soda		
Solid	Rs. 380 per ton	Rs. 640 per ton
Flake	Rs. 425 per ton	Rs. 710 per ton
Powder	Rs. 415 per ton	Rs. 700 per ton

It will be a further condition that imports of solid caustic soda may not exceed half the value of the licence. The balance quantity to be imported should be in flake and in powder."

Note:- In the Public Notice dated the 8th June, 1950, Government removed the conditions regarding maximum c.i.f. prices and selling prices for imports of caustic soda. It was announced that those conditions would not apply to the licences granted in the shipping period Jan.-June 1950.

July - December 1950 and January - June 1951:

In the Public Notice dated 12th September, 1950, Government have announced that licences will be issued for the import of caustic soda *from soft currency countries only* and no licences will be granted for imports from other areas. The licences will be issued only to established importers and actual users in accordance with the principles stated below:-

(a) Actual users will be granted six months requirements for each of the two periods.

(b) In the case of established importers licences will be issued subject to the following conditions:-

(i) that the importer should have imported this commodity in one year in each of the following groups of years :-

Group A	1944 - 45
	1945 - 46
	1946 - 47
	1947 - 48
Group B	1948 - 49
	1949 - 50

(ii) that the quota admissible to an applicant will be equal to 5% of the sum of his past imports in the years chosen by him.

(c) No licences will be issued to new comers.

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(b) BLEACHING POWDER

July to December 1948

S. No. of I.T.C. Schedule	Description	Import Tariff No.	Dollar Area	Hard currency Countries.	Sweden and Switzerland.	Sterling and Soft Currency Countries	Remarks
23	Bleaching paste and bleaching powder	28(1)	No licence will be granted	No licence will be granted	Liberally	Liberally	

January to June 1949

S. No. of I.T.C. Schedule	Description	Import Tariff No.	Dollar Area	Hard Currency Countries	Sterling and Soft Currency Countries	Remarks
23	Bleaching paste and bleaching powder	28(1)	No licence will be granted	No licence will be granted	'O.G.L. XI	—

July to December 1949

S. No. of I.T.C. Schedule	Description	I.C.T. Item No.	Dollar Area	Western Zone of Germany	Switzerland	Soft Currency Countries	Remarks
23	Bleaching paste and bleaching powder	28(1)	No licences	No licences	No licences	Subject to quota and monetary ceiling	—

January to June 1950

S. No. of I.C.T. Schedule	Description	I.C.T. Item No.	Dollar Area	Western Zone of Germany	Belgium and her Possessions	Japan	Other Currency Countries	Remarks
23	Bleaching paste & bleaching powder	28(1)	No licences	No licences	No licences	No licences	Subject to monetary ceiling	

July to December 1950

S. No. of I.C.T. Schedule	Description	I.C.T. Item No.	Dollar Area	Western Zone of Germany	Belgium and her Possessions	Japan	Other Currency Countries	Remarks
23	-do-	28(1)	*	*	*	*	*Licences will be granted on quota basis.	*In the case of actual users licences are issued for six months requirements and in the case of established importers licences are issued upto 50% of a previous basic year's import.

(c) LIQUID CHLORINE

Name of the article	July-Dec. 1948	Jan.-June 1949	July-Dec. 1949	Jan.-June 1950
1. Liquid Chlorine	No Licence from any area.	Dollar and hard currency areas. No licences. Soft Currency areas. O.G.L. XI.	Dollar and hard currency areas. No licences. Soft currency areas. Subject to quota and monetary ceiling.	Dollar and hard currency areas. No licences. Soft Currency areas. Subject to monetary ceiling.

July to December 1950

S. No. of I.T.C. Schedule	Description	I.C. T. Item No.	Dollar area						Belgium & her possessions			Western Germany			Switzerland			Other Currency Countries						Remarks
			July - Dec. 1950 only			Jan. - June 1951			July-Dec. 1950 only			July- Dec. 1950 only			July- Dec. 1950 only			July-Dec. 1950 only			Jan.-June 1951			
			EI	AU	NC	EI	AU	NC	EI	AU	NC	EI	AU	NC	EI	AU	NC	EI	AU	NC	EI	AU	NC	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
110	Chemicals falling under items No. 28, 28(6), 28(7) & 28(8) of the First Schedule to the Indian Tariff Act, 1934 and Drugs and Medicines falling under item No. 28(9) of that Schedule in packings upto and inclusive of 28 lbs., for goods in substance and upto and inclusive of one Winchester quart for goods in liquid, but excluding articles specified in any other serial of this Schedule.	28 28(6) 28(7) 28(8) 28(16) 28(18) 28(19) 28(20) 28(21) 28(29)	15% (V)	6 (V)	Nil	15% (V)	6 (V)	Nil	ad hoc	ad hoc	Nil	ad hoc	ad hoc	Nil	50% (V)	ad hoc	Nil	20% (V)	6 (V)	Nil	20% (V)	6 (V)	—	(V) Joint quota with S. Nos. 87, 108 & 109. (V) Licences will be granted only for essential drugs mentioned in Appendix B *. Applications should be made to the Chief Controller of Imports.

* Liquid Chlorine is not included in Appendix B.
EI Established Importers.
AU Actual users.
NC New Comers.

APPENDIX V

(*Vide* paragraph 14)

(a) *Statement showing the breakdown of landed costs into C.I.F., Customs duty and Clearing charges of one Cwt. of Caustic Soda*

Source of information	Origin of import	Date of import	Type and specification.	C.I.F.	Customs duty	Clearing charges	Landed cost	Selling price	Remarks.
1	2	3	4	5	6	7	8	9	10
				Rs. As. Ps.	Rs. As. Ps.	Rs. As. Ps.	Rs. As. Ps.	Rs. As. Ps.	Rs. As. Ps.
				(A) Caustic Soda (Solid)					
1. Imperial Chemical Industries (India) Ltd., Calcutta.	U.K.	1949	Solid 98/99%	18 3 3	7 12 10 (26% of Rs. 30 per cwt.)	0 8 0	26 8 1	30 3 0	The total landed costs including godown rent, insurance, etc. are as follows:- Rs. 28-12-0
	U.K.	1950	Solid 98/99%	18 3 4	6 3 10 (26% of Rs. 24 per cwt.)	0 9 2	25 0 4	28 10 0	Rs. 27-4-2
	U.K.	1949	Solid 99/100% (Electrolytic)	18 14 0	7 12 10 (26% of Rs. 30 per cwt.)	0 8 0	27 2 10	30 15 0	Rs. 29-7-6
	U.K	August & September 1950	Solid 98/99%	18 3 4	-	-	-	-	-
	do.	do.	do.	25 6 1					
	do.	do.	do.	20 5 11					
	do.	do.	do.	18 4 7					

					Rs.	As.	Ps.	Rs.	As.	Ps.	Rs.	As.	Ps.	Rs.	As.	Ps.	Rs.	As.	Ps.	
2.	The New Standard Chemicals Co. Ltd., Bombay.	U.S.A.	May '49	Solid 98/99%	15	11	0	10 (30% of Rs. 30 per cwt.)	13	0	1	0	0	27	8	0	29	2	0	Figures were furnished for 100 lbs and have been worked out for one cwt.
3.	The Buckingham & Carnatic Co. Ltd., Madras.	U.S.A.	29-4-49	Solid	21	10	6	10 (30% of Rs. 30 per cwt.)	13	0	0	8	0	32	15	6				
4.	Volkart Brothers, Bombay.	U.S.A.	July/Sept. 1948	Solid	47	8	0	8 (30% of Rs. 18 per cwt.)	13	5	1	1	7	56	7	0	Ranging from 58-1-7 to 23-0-0			The selling price was varying depending on the market conditions.
5.	The Bombay Kariana, Colour & Chemical Merchants Association, Bombay.	U.K.	1950	Solid	22	0	0	6 (20% of Rs. 24 per cwt.)	4	0	1	0	0	29	4	0	33	0	0	
6.	Collector of Customs, Madras.	U.K.	3-2-49	Solid	21	9	9													
		U.K.	25-7-50	Solid	18	4	6													
7	Collector of Customs, Calcutta.	U.S.A.	Oct'49	Solid	19	8	0													
8.	Collector of Customs, Saurashtra.	U.S.A.	1-3-50	Solid	30	1	0													
		U.S.A.	17-5-50	Solid	30	1	0													
		U.S.A.	18-7-50	Solid	30	1	0													
		U.S.A.	20-7-50	Solid	30	1	0													
		U.S.A.	26-8-50	Solid	30	0	0													
9.	Collector of Customs, Bombay.	U.K.	April'49	Solid	21	8	0													
		U.S.A.	April'49	Solid	20	0	0													
		U.K.	Letter D/- 25-8-50	Solid	18	2	10													
		U.K.	16-9-50	Solid	19	1	9													

1	2	3	4	5	6	7	8	9	10
				Rs. As. Ps.	Rs. As. Ps.	Rs. As. Ps.	Rs. As. Ps.	Rs. As. Ps.	
				(B) CAUSTIC SODA (FLAKE)					
1. Imperial Chemical Industries (India) Ltd., Calcutta.	U.K.	1949	Flake 98/99%	20 5 11	8 9 3 (26% of Rs. 33 per cwt.)	0 8 0	29 7 2	33 8 0	The total landed cost including godown rent, insurance, etc. comes to Rs.29-7-5
	U.K.	1950	Flake 98/99%	20 5 11	7 0 4 (26% of Rs. 27 per cwt.)	0 9 2	27 15 5	31 14 0	The total landed cost including godown rent, insurance, etc. comes to Rs. 30-5-8.
2. Volkart Brothers, Bombay	U.S.A.	July/Sept. 1948.	Flake	46 13 7	7 3 2 (36% of Rs. 20 per cwt.)	1 4 0	55 4 9	Ranging from 56-1-7 to 23-0-0	Selling price was varying depending on the market conditions.
3. Collector of Customs, Madras.	U.K.	3-2-49	Flake	29 12 0					
	U.S.A.	3-3-49	Flake	27 14 0 to 33 8 0					
	U.K.	25-7-50	Flake	20 6 3					
4. Collector of Customs, Bombay.	U.S.A.	Dec'48	Flake	40 0 0					
	U.S.A.	Letter D/- 25-8-50	Flake	21 3 5					

(b) *Statement showing the breakdown of landed costs into C.i.f. Customs duty and Clearing charges of one cut. of Bleaching Powder*)

Sl. No.	Source of Information	Origin of import	Date of import	Type and specification	C.I.F.			Customs duty			Clearing charges			Landed costs			Selling prices			Remarks
1	2	3	4	5	6			7			8			9			10			11
					Rs.	As.	Ps.	Rs.	As.	Ps.	Rs.	As.	Ps.	Rs.	As.	Ps.	Rs.	As.	Ps.	
	Imperial Chemical Industries (India) Ltd., Calcutta.	U.K.	1949	Tropical bleaching powder	16	1	10	Duty free			0	8	0	16	9	10	20	5	0	Total landed costs including godown rent, insurance etc. are as follows:- Rs. 19- 6- 6
		U.K.	1950 (upto 20th June 1950)	-do-	16	1	10	- do -			0	9	2	16	11	0	20	14	0	Rs. 19-14- 0
		U.K.	1950 (From 21st June 1950 to 4th August 1950)	-do-	18	12	7	- do -			0	9	2	19	5	9	24	2	0	Rs. 22-15- 7
		U.K.	August and September 1950	Tropical	17	6	1	-			-			-			-			
		U.K.	-do-	-do-	16	1	9	-			-			-			-			-
		U.K.	-do-	-do-	17	7	4	-			-			-			-			-
		U.K.	-do-	-do-	16	1	9	-			-			-			-			-
		U.K.	-do-	-do-	16	12		-			-			-			-			-
		U.K.	-do-	-do-	17	0		-			-			-			-			-
2.	Collector of Customs, Madras.	U.K.	11-12- 1949	-do-	16	6														
		U.K.	19- 7- 1950	-do-	18	2	6													
3.	Collector of Customs, Calcutta.	U.K.	Feb. 1950	-do-	16		10													
4.	Collector of Customs, Bombay.	U.K.	Jan. 1950	-do-	16	2														
		Egypt	Letter dated 25th Aug. '50	-do-	16	4														
		U.K.	18-10-1950	-do-	22	3														